1. Determine if the following side lengths could be used to form a triangle. Then determine if the triangle would be an acute, obtuse, or right triangle. Justify your answer!
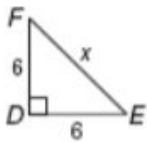
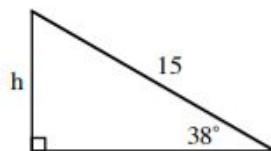   a. 2, 3, 4   c. 8, 10, 12

       b. 7, 11, 14   d. 9, 12, 15

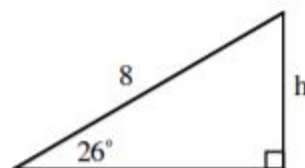2. Find x in $\triangle DEF$. Are the side lengths a pythagorean triple?

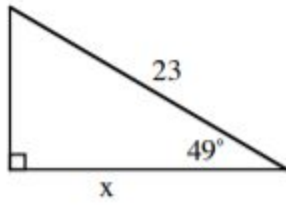3. Use trigonometric ratios to solve for each variable in the figures below:

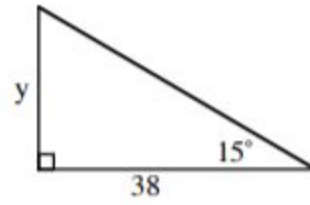   a.   b.

c.

23

49°

x

e.

y

15°

38

d.

37

41°

x

f.
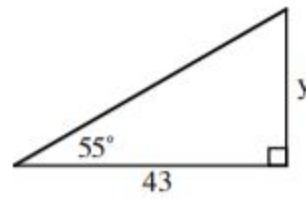

55°

43
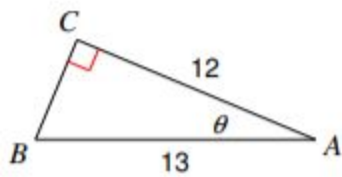
y
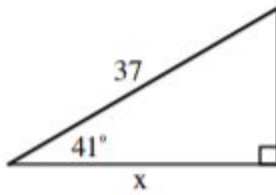
4. Solve for the missing angle:

a.

C

12

θ

B   13   A

b.

C

13

4

θ

A   B

5. If a 24-foot ladder makes a 58° angle with the ground, how many feet up a wall will it reach? Round your answer to the nearest tenth.

6. A ship's sonar finds that the angle of depression to a wreck on the bottom of the ocean is 13.2°.   If a point on the ocean floor is 75 meters directly below the ship, how many meters is it from the point on the ocean floor to the wreck? Round to the nearest tenth.

7. Find the angle of elevation of the sun if a building 125 feet tall casts a shadow 196 feet long. Round to the nearest degree.